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ABSTRACT

This booklet presents the high school assessment program for science education by listing Maryland's Core Learning Goals. The match of content indicators and the skills for successful elaborations in thinking, communication, and technology regarding science education are discussed. (ASK)

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Maryland Core Learning Goals
Science
Goal 1: Skills and Processes

Indicator: 1.1.1 ***The student will recognize that real problems have more than one solution and decisions to accept one solution over another are made on the basis of many issues.***

Skills For Success Indicator and Elaboration Matches
Goal 2. Thinking Skills

1.1 The student will develop alternative perspectives or ways of thinking and acting in complex situations.

1.1.1 Express thoughts relevant to situations.

1.1.3 Identify multiple perspectives in complex situations.

1.1.4 Contribute new ideas and perspectives in a variety of situations.

1.1.7 Present alternative perspectives or ways of doing things in complex situations.

1.1.8 Compare perspectives for similarities and differences.

1.3 The student will test and evaluate creative ideas before adopting them.

1.3.2 Evaluate ideas from a variety of perspectives.

1.3.3 Determine how well ideas serve their intended purposes.

2.1 The student will identify key ideas and issues in complex situations

2.1.1 Identify purposes for introducing ideas and issues in specific situations.

2.1.4 Establish criteria for determining the importance of ideas or issues to purposes and situations, including relevance and validity.

2.1.7 Represent relationships among ideas or issues verbally or nonverbally.

2.2 The student will evaluate the relevance and usefulness of supporting information in ideas and issues.

2.2.2 Identify information which appears to support purposes.

2.3 The student will examine basic concepts and assumptions underlying ideas, issues, or positions.

2.3.1 Identify ideas, issues, or positions in specific situations.

2.3.2 Determine underlying concepts and assumptions on which ideas, issues, or positions are based in specific situations.

2.4 The student will establish clear criteria for evaluating ideas, issues, or positions.

2.4.1 Identify issues, or positions in specific situations.

2.4.5 Represent relationships between ideas or issues and their supporting arguments or information

2.4.6 Evaluate issues, ideas, or positions, using specific criteria.

2.6 The student will use evidence and/or reason to support or refute ideas, issues, or positions.

2.6.2 Identify evidence and reasoning used to support or refute ideas, issues, positions.

2.6.3 Determine the relevance and validity of evidence and reasoning used to support or refute ideas, issues, or positions.

Indicator: 1.1.2 ***The student will modify or affirm scientific ideas according to accumulated evidence.***

Skills For Success Indicator and Elaboration Matches
Goal 2: Thinking Skills

1.1 The student will develop alternative perspectives or ways of thinking and acting in complex situations.

1.1.1 Express thoughts relevant to situations.

1.1.3 Identify multiple perspectives in complex situations.

1.1.4 Contribute new ideas and perspectives in a variety of situations.

1.1.7 Present alternative perspectives or ways of doing things in complex situations.

1.1.8 Compare perspectives for similarities and differences.

1.2 The student will represent creative ideas in forms appropriate to purposes and situations.

1.2.2 Determine relevance, usefulness, and originality of ideas for specific purposes and situations.

1.2.3 Represent ideas clearly and concisely.

1.3 The student will test and evaluate creative ideas before adopting them.

1.3.2 Evaluate ideas from a variety of perspectives.

1.3.3 Determine how well ideas serve their intended purposes.

2.1 The student will identify key ideas and issues in complex situations.

2.1.3 Identify explicit and implicit ideas or issues in specific situations.

2.1.5 Identify major ideas and issues in complex situations.

2.1.7 Represent relationships among ideas or issues verbally or nonverbally.

2.1.9 Identify the most important ideas or issues in specific situations.

2.2 The student will evaluate the relevance and usefulness of supporting information in ideas and issues.

2.2.2 Identify information which appears to support purposes.

2.2.4 Determine the relevance and usefulness of information for specific purposes.

2.2.6 Identify additional information needed to support purposes, when appropriate.

2.3 The student will examine basic concepts and assumptions underlying ideas, issues, or positions.

2.3.3 Identify explicit concepts and assumptions that support or refute ideas, issues, or positions.

2.3.4 Determine implicit concepts and assumptions that support or refute ideas, issues, or positions.

2.6 The student will use evidence and/or reason to support or refute ideas, issues, or positions.

2.6.1 Identify ideas, issues, or positions in specific situations.

2.6.5 Represent analysis verbally or nonverbally.

2.6.6 Support or refute representations of ideas, issues, or positions, using evidence and reasoning.

Indicator: 1.1.3 ***The student will critique arguments that are based on faulty, misleading data or an on the incomplete use of numbers.***

Skills For Success Indicator and Elaboration Matches
Goal 2: Thinking Skills

1.1 The student will develop alternative perspectives or ways of thinking and acting in complex situations.

1.1.1 Express thoughts relevant to situations.

1.1.3 Identify multiple perspectives in complex situations.

1.1.4 Contribute new ideas and perspectives in a variety of situations.

1.1.8 Compare perspectives for similarities and differences.

1.2 The student will represent creative ideas in forms appropriate to purposes and situations.

1.2.2 Determine relevance, usefulness, and originality of ideas for specific purposes and situations.

2.5 The student will recognize bias, vested interests, stereotyping, manipulation, and misuse of information.

2.5.4 Analyze the effects of bias, vested interest, stereotyping, manipulation, or misuse of information in specific situations.

Indicator: 1.1.4 ***The student will recognize data that are biased.***

Skills For Success Indicator and Elaboration Matches
Goal 2: Thinking Skills

1.1 The student will develop alternative perspectives or ways of thinking and acting in complex situations.

1.1.1 Express thoughts relevant to situations.

1.1.3 Identify multiple perspectives in complex situations.

2.5 The student will recognize bias, vested interests, stereotyping, manipulation, and misuse of information.

2.5.2 Identify bias, vested interest, stereotyping, manipulation, and misuse of information.

Indicator: 1.1.5 The student will explain factors that produce biased data.

Skills For Success Indicator and Elaboration Matches
Goal 2: Thinking Skills

1.1 The student will develop alternative perspectives or ways of thinking and acting in complex situations.

1.1.1 Express thoughts relevant to situations.

1.1.3 Identify multiple perspectives in complex situations.

1.1.8 Compare perspectives for similarities and differences.

2.5 The student will recognize bias, vested interests, stereotyping, manipulation, and misuse of information.

2.5.2 Identify bias, vested interest, stereotyping, manipulation, and misuse of information.

Indicator: 1.2.1 ***The student will identify meaningful, answerable scientific questions.***

Skills For Success Indicator and Elaboration Matches
Goal 2: Thinking Skills

1.1 The student will develop alternative perspectives or ways of thinking and acting in complex situations.

1.1.1 Express thoughts relevant to situations.

1.2 The student will represent creative ideas in forms appropriate to purposes and situations.

1.2.2 Determine relevance, usefulness, and originality of ideas for specific purposes and situations.

1.2.3 Represent ideas clearly and concisely.

1.3 The student will test and evaluate creative ideas before adopting them.

1.3.3 Determine how well ideas serve their intended purposes.

2.1 The student will identify key ideas and issues in complex situations

2.1.5 Identify major ideas and issues in complex situations.

2.1.9 Identify the most important ideas or issues in specific situations.

2.2 The student will evaluate the relevance and usefulness of supporting information in ideas and issues.

2.2.2 Identify information which appears to support purposes.

2.3 The student will examine basic concepts and assumptions underlying ideas, issues, or positions.

2.3.1 Identify ideas, issues, or positions in specific situations.

2.3.3 Identify explicit concepts and assumptions that support or refute ideas, issues, or positions.

2.4 The student will establish clear criteria for evaluating ideas, issues, or positions.

2.4.1 Identify issues, or positions in specific situations.

4.1 The student will understand situations within which problems are found.

4.1.2 Identify important information, assumptions, relationships, and perspectives that may affect identification, understanding, and solutions of problems in specific situations.

4.1.4 Represent understanding of situations verbally or nonverbally.

Indicator: 1.2.3 ***The student will formulate a working hypothesis.***

Skills For Success Indicators and Elaboration Matches
Goal 2: Thinking Skills

1.1 The student will develop alternative perspectives or ways of thinking and acting in complex situations.

1.1.1 Express thoughts relevant to situations.

1.2 The student will represent creative ideas in forms appropriate to purposes and situations.

1.2.2 Determine relevance, usefulness, and originality of ideas for specific purposes and situations.

1.3 The student will test and evaluate creative ideas before adopting them.

1.3.2 Evaluate ideas from a variety of perspectives.

2.1 The student will identify key ideas and issues in complex situations.

2.1.3 Identify explicit and implicit ideas or issues in specific situations.

2.2 The student will evaluate the relevance and usefulness of supporting information in ideas and issues.

2.2.2 Identify information which appears to support purposes.

2.3 The student will examine basic concepts and assumptions underlying ideas, issues, or positions.

2.3.1 Identify ideas, issues, or positions in specific situations.

2.4 The student will establish clear criteria for evaluating ideas, issues, or positions.

2.4.1 Identify issues, or positions in specific situations.

4.1 The student will understand situations within which problems are found.

4.1.2 Identify important information, assumptions, relationships, and perspectives that may affect identification, understanding, and solutions of problems in specific situations.

4.1.3 Determine missing information that may affect understanding and solving problems in specific situations.

Indicator: 1.2.5 ***The student will select appropriate instruments and materials to conduct an investigation.***

Skills For Success Indicator and Elaboration Matches
Goal 2: Thinking Skills

2.2 The student will evaluate the relevance and usefulness of supporting information in ideas and issues.

2.2.2 Identify information which appears to support purposes.

4.4 The student will select and use appropriate strategies to solve problems.

4.4.1 Select and use strategies that seem most appropriate to problems, problem-solving, and specific situations.

Goal 4: Technology Skills

1.2 The student will identify and describe current technologies used to meet a variety of needs, including accessing and managing information, communicating, performing work, and solving problems in a variety of situations.

1.2.2 Identify technologies used to meet needs.

Indicator: 1.2.6 ***The student will identify and/or describe appropriate methods for conducting an investigation and affirm the need for proper controls in an experiments.***

Skills For Success Indicator and Elaboration Matches
Goal 2: Thinking Skills

1.1 The student will develop alternative perspectives or ways of thinking and acting in complex situations.

1.1.1 Express thoughts relevant to situations.

1.1.4 Contribute new ideas and perspectives in a variety of situations.

1.2 The student will represent creative ideas in forms appropriate to purposes and situations.

1.2.2 Determine relevance, usefulness, and originality of ideas for specific purposes and situations.

1.2.3 Represent ideas clearly and concisely.

1.3 The student will test and evaluate creative ideas before adopting them.

1.3.2 Evaluate ideas from a variety of perspectives.

2.1 The student will identify key ideas and issues in complex situations

2.1.3 Identify explicit and implicit ideas or issues in specific situations.

2.1.7 Represent relationships among ideas or issues verbally or nonverbally.

2.1.9 Identify the most important ideas or issues in specific situations.

2.2 The student will evaluate the relevance and usefulness of supporting information in ideas and issues.

2.2.2 Identify information which appears to support purposes.

2.3 The student will examine basic concepts and assumptions underlying ideas, issues, or positions.

2.3.1 Identify ideas, issues, or positions in specific situations.

2.3.2 Determine underlying concepts and assumptions on which ideas, issues, or positions are based in specific situations.

2.3.4 Determine implicit concepts and assumptions that support or refute ideas, issues or positions.

4.4 The student will evaluate solutions and strategies used to solve problems.

4.4.1 Select and use strategies that seem most appropriate to problems, problem-solving, and specific situations.

Goal 4: Technology Skills

1.2 The student will identify and describe current technologies used to meet a variety of needs, including accessing and managing information, communicating, performing work, and solving problems in a variety of situations.

1.2.2 Identify technologies used to meet needs.

Indicator: 1.2.7 ***The student will use relationships discovered in the lab to explain phenomena observed outside the laboratory.***

Skills For Success Indicator and Elaboration Matches
Goal 2: Thinking Skills

1.1 The student will develop alternative perspectives or ways of thinking and acting in complex situations.

1.1.1 Express thoughts relevant to situations.

2.3 The student will examine basic concepts and assumptions underlying ideas, issues, or positions.

2.3.3 Identify explicit concepts and assumptions that support or refute ideas, issues, or positions.

2.3.4 Determine implicit concepts and assumptions that support or refute, ideas, issues or positions.

2.3.5 Determine the extent to which explicit and implicit concepts and assumptions support or refute ideas, issues, or positions.

2.4 The student will establish clear criteria for evaluating ideas, issues, or positions.

2.4.1 Identify issues, or positions in specific situations.

2.4.5 Represent relationships between ideas or issues and their supporting arguments or information.

2.4.6 Evaluate issues, ideas, or positions, using specific criteria.

2.6 The student will use evidence and/or reason to support or refute ideas, issues, or positions.

2.6.5 Represent analyses verbally or nonverbally.

2.6.6 Support or refute representations of ideas, issues, or positions, using analyses of evidence and reasoning.

Indicator: 1.2.8 ***The student will defend the need for verifiable data.***

Skills For Success Indicator and Elaboration Matches
Goal 2: Thinking Skills

1.1 The student will develop alternative perspectives or ways of thinking and acting in complex situations.

1.1.1 Express thoughts relevant to situations.

2.6 The student will use evidence and/or reason to support or refute ideas, issues, or positions.

2.6.1 Identify ideas, issues, or positions in specific situations.

2.6.2 Identify evidence and reasoning used to support or refute ideas, issues, or positions.

2.6.3 Determine the relevance and validity of evidence and reasoning used to support or refute ideas, issues, or positions.

Indicator: 1.3.2 ***The student will recognize safe laboratory procedures.***

Skills For Success Indicator and Elaboration Matches
Goal 2: Thinking Skills

2.1 The student will identify key ideas and issues in complex situations

2.1.3 Identify explicit and implicit ideas or issues in specific situations.

2.1.7 Represent relationships among ideas or issues verbally or nonverbally.

2.1.9 Identify the most important ideas or issues in specific situations.

2.3 The student will examine basic concepts and assumptions underlying ideas, issues, or positions.

2.3.2 Determine underlying concepts and assumptions on which ideas, issues, or positions are based in specific situations.

2.3.3 Identify explicit concepts and assumptions that support or refute ideas, issues, or positions.

2.3.4 Determine implicit concepts and assumptions that support or refute, ideas, issues or positions.

4.4 The student will evaluate solutions and strategies used to solve problems.

4.4.1 Select and use strategies that seem most appropriate to problems, problem-solving, and specific situations.

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Indicator: 1.4.1 ***The student will organize data appropriately using techniques such as tables, graphs, and webs.***

Skills For Success Indicator and Elaboration Matches
Goal 2: Thinking Skills

2.2 The student will evaluate the relevance and usefulness of supporting information in ideas and issues.

2.2.4 Determine the relevance and usefulness of information for specific purposes.

Indicator: 1.4.2 ***The student will analyze data to make predictions, decisions or draw conclusions.***

Skills For Success Indicator and Elaboration Matches
Goal 2: Thinking Skills

2.2 The student will evaluate the relevance and usefulness of supporting information in ideas and issues.

2.2.2 Identify information which appears to support purposes.

2.2.4 Determine the relevance and usefulness of information for specific purposes.

2.2.5 Determine credibility of sources of information for specific purposes.

4.5 The student will evaluate solutions and strategies used to solve problems.

4.5.2 Evaluate solutions, using specific criteria.

Indicator: 1.4.3 ***The student will use experimental data from various investigators to validate results.***

Skills For Success Indicator and Elaboration Matches
Goal 2: Thinking Skills

2.2 The student will evaluate the relevance and usefulness of supporting information in ideas and issues.

2.2.2 Identify information which appears to support purposes.

2.2.4 Determine the relevance and usefulness of information for specific purposes.

2.2.5 Determine credibility of sources of information for specific purposes.

Indicator: 1.4.5 ***The student will check graphs to determine that they do not misrepresent results.***

Skills For Success Indicator and Elaboration Matches
Goal 2: Thinking Skills

2.2 The student will evaluate the relevance and usefulness of supporting information in ideas and issues.

2.2.5 Determine credibility of sources of information for specific purposes.

Indicator: 1.4.6 ***The student will describe trends revealed by data.***

Skills For Success Indicator and Elaboration Matches
Goal 2: Thinking Skills

2.2 The student will evaluate the relevance and usefulness of supporting information in ideas and issues.

2.2.2 Identify information which appears to support purposes.

Indicator: 1.4.7 ***The student will determine the sources of error that limit the accuracy or precision of experimental results.***

Skills For Success Indicator and Elaboration Matches
Goal 2: Thinking Skills

2.2 The student will evaluate the relevance and usefulness of supporting information in ideas and issues.

2.2.3 Establish criteria for evaluating the relevance and usefulness of information for specific purposes.

Indicator: 1.4.9 ***The student will use analyzed data to confirm, modify, or reject an hypothesis.***

Skills For Success Indicator and Elaboration Matches
Goal 2: Thinking Skills

2.2 The student will evaluate the relevance and usefulness of supporting information in ideas and issues.

2.2.7 Compare own analyses of the relevance, usefulness, and credibility of information with analyses by others.

4.5 The student will evaluate solutions and strategies used to solve problems.

4.5.2 Evaluate solutions using specific criteria.

Indicator: 1.5.1 ***The student will demonstrate the ability to summarize data (measurements/observations).***

Skills For Success Indicator and Elaboration Matches
Goal 2: Thinking Skills

1.1 The student will develop alternative perspectives or ways of thinking and acting in complex situations.

1.1.1 Express thoughts relevant to situations.

1.1.4 Contribute new ideas and perspectives in a variety of situations.

2.1 The student will identify key ideas and issues in complex situations

2.1.3 Identify explicit and implicit ideas or issues in specific situations.

2.1.7 Represent relationships among ideas or issues verbally or nonverbally.

Indicator: 1.5.2 ***The student will explain scientific concepts and processors through drawing, writing, and/or oral communication.***

Skills For Success Indicator and Elaboration Matches
Goal 2: Thinking Skills

1.1 The student will develop alternative perspectives or ways of thinking and acting in complex situations.

1.1.1 Express thoughts relevant to situations.

1.1.4 Contribute new ideas and perspectives in a variety of situations.

2.1 The student will identify key ideas and issues in complex situations

2.1.3 Identify explicit and implicit ideas or issues in specific situations.

2.1.5 Identify major ideas and issues in complex situations.

2.1.7 Represent relationships among ideas or issues verbally or nonverbally.

2.1.9 Identify the most important ideas or issues in specific situations.

2.2 The student will evaluate the relevance and usefulness of supporting information in ideas and issues.

2.2.2 Identify information which appears to support purposes.

2.2.4 Determine the relevance and usefulness of information for specific purposes.

2.3 The student will examine basic concepts and assumptions underlying ideas, issues, or positions.

2.3.1 Identify ideas, issues, or positions in specific situations.

2.3.2 Determine underlying concepts and assumptions on which ideas, issues, or positions are based in specific situations.

2.3.3 Identify explicit concepts and assumptions that support or refute ideas, issues, or positions.

2.3.4 Determine implicit concepts and assumptions that support or refute, ideas, issues or positions.

2.4 The student will establish clear criteria for evaluating ideas, issues, or positions.

2.4.1 Identify issues, or positions in specific situations.

2.4.5 Represent relationships between ideas or issues and their supporting arguments or information.

2.6 **The student will use evidence and/or reason to support or refute ideas, issues, or positions.**

2.6.1 Identify ideas, issues, or positions in specific situations.

2.6.3 Determine the relevance and validity of evidence and reasoning used to support or refute ideas, issues, or positions.

2.6.5 Represent analysis verbally or nonverbally.

2.6.6 Support or refute representations of ideas, issues, or positions, using evidence and reasoning.

Indicator: 1.5.4 ***The student will use tables, graphs, and displays to support arguments and claims in both written and oral communication.***

Skills For Success Indicator and Elaboration Matches
Goal 2: Thinking Skills

2.1 The student will identify key ideas and issues in complex situations

2.1.7 Represent relationships among ideas or issues verbally or nonverbally

Indicator: 1.5.5 ***The student will create or/and interpret graphics.***

Skills For Success Indicator and Elaboration Matches
Goal 2. Thinking Skills

2.1 The student will identify key ideas and issues in complex situations

2.1.5 Identify major ideas and issues in complex situations.

Indicator: 1.5.6 ***The student will read a technical selection and interpret it appropriately.***

Skills For Success Indicator and Elaboration Matches
Goal 2: Thinking Skills

1.1 The student will develop alternative perspectives or ways of thinking and acting in complex situations.

1.1.1 Express thoughts relevant to situations.

1.1.4 Contribute new ideas and perspectives in a variety of situations.

2.1 The student will identify key ideas and issues in complex situations

2.1.9 Identify the most important ideas or issues in specific situations.

2.2 The student will evaluate the relevance and usefulness of supporting information in ideas and issues.

2.2.2 Identify information which appears to support purposes.

2.4 The student will establish clear criteria for evaluating ideas, issues, or positions.

2.4.5 Represent relationships between ideas or issues and their supporting arguments or information.

2.4.6 Evaluate issues, ideas, or positions, using specific criteria.

2.6 The student will use evidence and/or reason to support or refute ideas, issues, or positions.

2.6.1 Identify ideas, issues, or positions in specific situations.

2.6.2 Identify evidence and reasoning used to support or refute ideas, issues, or positions.

2.6.3 Determine the relevance and validity of evidence and reasoning used to support or refute ideas, issues, or positions.

2.6.5 Represent analysis verbally or nonverbally.

2.6.6 Support or refute representations of ideas, issues, or positions, using evidence and reasoning.

Indicator: 1.5.7 ***The student will use, explain, and/or construct various classification systems.***

Skills For Success Indicator and Elaboration Matches
Goal 2: Thinking Skills

1.1 The student will develop alternative perspectives or ways of thinking and acting in complex situations.

1.1.1 Express thoughts relevant to situations.

1.1.4 Contribute new ideas and perspectives in a variety of situations.

1.1.7 Present alternative perspectives or ways of doing things in complex situations.

2.1 The student will identify key ideas and issues in complex situations.

2.1.1 Identify purposes for introducing ideas and issues in specific situations.

2.1.7 Represent relationships among ideas or issues verbally or nonverbally.

2.2 The student will evaluate the relevance and usefulness of supporting information in ideas and issues.

2.2.4 Determine the relevance and usefulness of information for specific purposes.

2.3 The student will examine basic concepts and assumptions underlying ideas, issues, or positions.

2.3.1 Identify ideas, issues, or positions in specific situations.

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Indicator: 1.5.8 ***The student will describe similarities and differences when explaining concepts and/or principals.***

Skills For Success Indicator and Elaboration Matches
Goal 2: Thinking Skills

1.1 The student will develop alternative perspectives or ways of thinking and acting in complex situations.

1.1.1 Express thoughts relevant to situations.

1.1.4 Contribute new ideas and perspectives in a variety of situations.

1.1.7 Present alternative perspectives or ways of doing things in complex situations.

1.1.8 Compare perspectives for similarities and differences.

2.1 The student will identify key ideas and issues in complex situations

2.1.7 Represent relationships among ideas or issues verbally or nonverbally.

Indicator: 1.5.9 ***The student will communicate conclusions derived through a synthesis of ideas.***

Skills For Success Indicator and Elaboration Matches
Goal 2: Thinking Skills

1.1 The student will develop alternative perspectives or ways of thinking and acting in complex situations.

1.1.1 Express thoughts relevant to situations.

1.1.4 Contribute new ideas and perspectives in a variety of situations.

1.1.7 Present alternative perspectives or ways of doing things in complex situations.

2.1 The student will identify key ideas and issues in complex situations

2.1.1 Identify purposes for introducing ideas and issues in specific situations.

2.1.3 Identify explicit and implicit ideas or issues in specific situations.

2.1.5 Identify major ideas and issues in complex situations.

2.1.7 Represent relationships among ideas or issues verbally or nonverbally.

2.1.9 Identify the most important ideas or issues in specific situations.

2.2 The student will evaluate the relevance and usefulness of supporting information in ideas and issues.

2.2.2 Identify information which appears to support purposes.

2.2.4 Determine the relevance and usefulness of information for specific purposes.

2.2.6 Identify additional information needed to support purposes, when appropriate.

2.3 The student will examine basic concepts and assumptions underlying ideas, issues, or positions.

2.3.1 Identify ideas, issues, or positions in specific situations.

2.3.3 Identify explicit concepts and assumptions that support or refute ideas, issues, or positions.

2.3.4 Determine implicit concepts and assumptions that support or refute, ideas, issues or positions.

2.4 The student will establish clear criteria for evaluating ideas, issues, or positions.

2.4.1 Identify issues, or positions in specific situations.

2.4.5 Represent relationships between ideas or issues and their supporting arguments or information.

2.4.6 Evaluate issues, ideas, or positions, using specific criteria.

2.6 The student will use evidence and/or reason to support or refute ideas, issues, or positions.

2.6.1 Identify ideas, issues, or positions in specific situations.

2.6.2 Identify evidence and reasoning used to support or refute ideas, issues, or positions.

2.6.3 Determine the relevance and validity of evidence and reasoning used to support or refute ideas, issues, or positions.

2.6.5 Represent analyses verbally or nonverbally.

2.6.6 Support or refute representations of ideas, issues, or positions, using analyses of evidence and reasoning.

Indicator: 1.6.1 ***The student will use ratio and proportion in appropriate situations to solve problems.***

Skills For Success Indicator and Elaboration Matches
Goal 2: Thinking Skills

4.1 The student will understand situations within which problems are found.

4.1.3 Determine missing information that may affect understanding and solving problems in specific situations.

4.3 The student will identify and evaluate alternative ways of solving problems.

4.3.1 Identify strategies that have worked in similar problem situations.

4.3.2 Match potential problem-solving strategies with expected solutions, available information, and similarity of situations.

4.3.3 Identify knowledge, resources, and skills required to solve problems.

4.3.4 Identify strategies that seem most appropriate to situations, expected solutions, knowledge, available information and resources, and available levels of skills.

4.4 The student will select and use appropriate strategies to solve problems.

4.4.1 Select and use strategies that seem most appropriate to problems, problem-solving, and specific situations.

4.4.5 Compare expected outcomes with actual outcomes in each stage.

4.5 The student will evaluate solutions and strategies used to solve problems.

4.5.2 Evaluate solutions, using specific criteria.

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Indicator: 1.6.5 ***The student will judge the reasonableness of an answer.***

Skills For Success Indicator and Elaboration Matches
Goal 2: Thinking Skills

4.4 The student will select and use appropriate strategies to solve problems.

4.4.5 Compare expected outcomes with actual outcomes in each stage

Indicator: 1.7.1 ***The student will apply the skills, processes and concepts of biology, chemistry, physics, and earth science to societal issues.***

Skills For Success Indicator and Elaboration Matches
Goal 2: Thinking Skills

1.1 The student will develop alternative perspectives or ways of thinking and acting in complex situations.

1.1.1 Express thoughts relevant to situations.

1.1.4 Contribute new ideas and perspectives in a variety of situations.

1.1.7 Present alternative perspectives or ways of doing things in complex situations.

1.2 The student will represent creative ideas in forms appropriate to purposes and situations.

1.2.2 Determine relevance, usefulness, and originality of ideas for specific purposes and situations.

1.2.3 Represent ideas clearly and concisely.

2.1 The student will identify key ideas and issues in complex situations

2.1.3 Identify explicit and implicit ideas or issues in specific situations.

2.1.5 Identify major ideas and issues in complex situations.

2.1.7 Represent relationships among ideas or issues verbally or nonverbally.

2.2 The student will evaluate the relevance and usefulness of supporting information in ideas and issues.

2.2.2 Identify information which appears to support purposes.

2.2.4 Determine the relevance and usefulness of information for specific purposes.

2.3 The student will examine basic concepts and assumptions underlying ideas, issues, or positions.

2.3.1 Identify ideas, issues, or positions in specific situations.

2.3.2 Determine underlying concepts and assumptions on which ideas, issues, or positions are based in specific situations.

2.3.4 Determine implicit concepts and assumptions that support or refute, ideas, issues or positions.

2.6 The student will use evidence and/or reason to support or refute ideas, issues, or positions.

2.6.1 Identify ideas, issues, or positions in specific situations.

2.6.2 Identify evidence and reasoning used to support or refute ideas, issues, or positions.

2.6.3 Determine the relevance and validity of evidence and reasoning used to support or refute ideas, issues, or positions.

Goal 4: Technology Skills

3.1 The student will demonstrate an understanding of the impact of technologies on individuals, society, and the environment.

3.1.1 Explain the importance of understanding the past, present, and future effects of technologies on individuals, society, and the environment.

3.1.4 Analyze technologies' effects on the quality of life of individuals, the explosion of knowledge, and the nature of creative expression.

Indicator: 1.7.2 ***The student will identify and evaluate the impact of scientific ideas and/or advancements in technology on society.***

Skills For Success Indicator and Elaboration Matches
Goal 2: Thinking Skills

1.1 The student will develop alternative perspectives or ways of thinking and acting in complex situations.

1.1.1 Express thoughts relevant to situations.

1.1.3 Identify multiple perspectives in complex situations.

1.1.7 Present alternative perspectives or ways of doing things in complex situations.

1.1.8 Compare perspectives for similarities and differences.

1.2 The student will represent creative ideas in forms appropriate to purposes and situations.

1.2.3 Represent ideas clearly and concisely.

2.1 The student will identify key ideas and issues in complex situations

2.1.3 Identify explicit and implicit ideas or issues in specific situations.

2.1.4 Establish criteria for determining the importance of ideas or issues to purposes and situations, including relevance and validity.

2.1.5 Identify major ideas and issues in complex situations.

2.1.7 Represent relationships among ideas or issues verbally or nonverbally.

2.3 The student will examine basic concepts and assumptions underlying ideas, issues, or positions.

2.3.1 Identify ideas, issues, or positions in specific situations.

2.3.2 Determine underlying concepts and assumptions on which ideas, issues, or positions are based in specific situations.

2.3.4 Determine implicit concepts and assumptions that support or refute ideas, issues or positions.

2.4 The student will establish clear criteria for evaluating ideas, issues, or positions.

2.4.1 Identify issues, or positions in specific situations.

2.4.5 Represent relationships between ideas or issues and their supporting arguments or information.

2.4.6 Evaluate issues, ideas, or positions, using specific criteria.

2.6 **The student will use evidence and/or reason to support or refute ideas, issues, or positions.**

2.6.1 Identify ideas, issues, or positions in specific situations.

2.6.2 Identify evidence and reasoning used to support or refute ideas, issues, or positions.

2.6.3 Determine the relevance and validity of evidence and reasoning used to support or refute ideas, issues, or positions.

2.6.5 Represent analyses verbally or nonverbally.

2.6.6 Support or refute representations of ideas, issues, or positions, using analyses of evidence and reasoning.

Goal 4. Technology Skills

3.1 **The student will demonstrate an understanding of the impact of technologies on individuals, society, and the environment.**

3.1.1 Explain the importance of understanding the past, present, and future effects of technologies on individuals, society, and the environment.

3.1.4 Analyze technologies' effects on the quality of life of individuals, the explosion of knowledge, and the nature of creative expression.

3.1.7 Determine the limitations of technologies as solutions to problems.

3.2 **The student will evaluate the effects of technologies in individuals, society, and the environment in a variety of situations.**

3.2.1 Identify a variety of ways technologies can affect individuals, society, and the environment.

Indicator: 1.7.3 ***The student will describe the role of science in the development of literature, art, and music.***

Skills For Success Indicator and Elaboration Matches
Goal 2: Thinking Skills

1.1 The student will develop alternative perspectives or ways of thinking and acting in complex situations.

1.1.1 Express thoughts relevant to situations.

1.2 The student will represent creative ideas in forms appropriate to purposes and situations.

1.2.2 Determine relevance, usefulness, and originality of ideas for specific purposes and situations.

1.2.3 Represent ideas clearly and concisely.

2.2 The student will evaluate the relevance and usefulness of supporting information in ideas and issues.

2.2.2 Identify information which appears to support purposes.

2.2.4 Determine the relevance and usefulness of information for specific purposes.

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Indicator: 1.7.6 ***The student will explain how development of scientific knowledge leads to the creation of new technology and how technological accomplishments allow for additional scientific advances.***

Skills For Success Indicator and Elaboration Matches
Goal 2: Thinking Skills

1.1 The student will develop alternative perspectives or ways of thinking and acting in complex situations.

1.1.1 Express thoughts relevant to situations.

1.1.4 Contribute new ideas and perspectives in a variety of situations.

1.1.7 Present alternative perspectives or ways of doing things in complex situations.

1.2 The student will represent creative ideas in forms appropriate to purposes and situations.

1.2.2 Determine relevance, usefulness, and originality of ideas for specific purposes and situations.

1.2.3 Represent ideas clearly and concisely.

2.1 The student will identify key ideas and issues in complex situations

2.1.3 Identify explicit and implicit ideas or issues in specific situations.

2.1.4 Establish criteria for determining the importance of ideas or issues to purposes and situations, including relevance and validity.

2.1.7 Represent relationships among ideas or issues verbally or nonverbally.

2.2 The student will evaluate the relevance and usefulness of supporting information in ideas and issues.

2.2.2 Identify information which appears to support purposes.

2.2.4 Determine the relevance and usefulness of information for specific purposes.

2.3 The student will examine basic concepts and assumptions underlying ideas, issues, or positions.

2.3.1 Identify ideas, issues, or positions in specific situations.

2.3.2 Determine underlying concepts and assumptions on which ideas, issues, or positions are based in specific situations.

2.6 **The student will use evidence and/or reason to support or refute ideas, issues, or positions.**

2.6.5 Represent analysis verbally or nonverbally.

2.6.6 Support or refute representations of ideas, issues, or positions, using evidence and reasoning.

Goal 4: Technology Skills

3.1 **The student will demonstrate an understanding of the impact of technologies on individuals, society, and the environment.**

3.1.1 Explain the importance of understanding the past, present, and future effects of technologies on individuals, society, and the environment.

3.1.4 Analyze technologies' effects on the quality of life of individuals, the explosion of knowledge, and the nature of creative expression.

3.1.7 Determine the limitations of technologies as solutions to problems.

3.2 **The student will evaluate the effects of technologies in individuals, society, and the environment in a variety of situations.**

3.2.1 Identify a variety of ways technologies can affect individuals, society, and the environment.